PATTERN BOOK.

LIST

OF

PATTERNS, ETC.

BELONGING TO THE

SOUTH BOSTON IRON COMPANY;

CYRUS ALGER AND OTHERS,

PROPRIETORS.

REVISED AND CORRECTED, WITH ADDITIONS MADE, TO MAY 1, 1851.

Foundry and Machine Shop — South Boston.
Office — Head of Central Wharf.

BOSTON:

PRINTED BY JOHN WILSON & SON,
22, SCHOOL STREET.

1851.

Eng 1838.51

SOUTH BOSTON IRON COMPANY.

THE SOUTH BOSTON IRON COMPANY are prepared to execute orders for CASTINGS of every description, at the shortest notice, and on the most favorable terms.

In addition to the Geer-wheels, &c. which are particularly enumerated in the following pages, they are constantly adding new patterns to the list, and have first-rate pattern-makers in their employ, so that those who are unable to accommodate themselves from such as are already on hand can be suited with new ones, made at short notice, and of such form and dimensions as may be required. They have also a great variety of Gudgeon, Shaft, Pedestal, Box, and other Patterns used in the various kinds of ma-

chinery; and Hanger Patterns from 8½ to 18 inches, suitable for shafts from 1¼ to 2½ inches.

They have also a *Machine Shop* attached to the Foundry, where all kinds of Boring and Turning, including Wrought Iron and Blacksmith Work, are executed in the best manner.

ROLLING-MILL CASTINGS.

All descriptions of castings for Rolling-mills are furnished to order.

Chilled Rollers, of any dimensions desired, are made to order and warranted. From long experience in this branch of business (Mr. Alger having originally invented and patented the present mode of casting them), they feel confident of being able to furnish a first-rate article.

COMPOSITION CASTINGS AND BRONZE CANNON.

These will be furnished at short notice, and of the best quality. These Guns intended for Merchantmen or Steamers to give notice of arrival or departure, as well as for defence, if

occasion should require, are of various calibers, usually 4, 6 and 9'pounders. They are attached to carriages, and are furnished with percussion locks.

A constant supply of the following articles, among many others, kept on hand : —

Potash Kettles
Cauldrons, 15 to 75 galls.
Bark Mills
Corn Crackers
Door Scrapers
Hawser Pipes
Chain Deck Pipes
Stove Deck Pipes
Tire Benders
Forge Backs
Oven Doors
Ash Doors
Boiler Doors
 Do. Grates
Grate Bars, 12 to 36 inches
Cylinder Stoves
Frames and Grates
Basket Grates
Cespools
Travellers
Grind-stone Cranks
Friction Rollers for do.
Hoisting Wheels and Pinions
Lathe Wheels
Lathe Poppetts
Rests and T's for do.
Windlass Boxes
Truck Wheels
Furnaces for Heating Houses
Dumb Bells
Wing Gudgeons
Saw Mill Cranks
Fulling Mill do.
Rollers for Doors

Barrow's celebrated Cooking Ranges, three sizes, constantly on hand.

SUGAR MILLS.

Sugar Mills, both *horizontal* for *steam power*, and *perpendicular* for *cattle power*, made at short notice, and usually on hand.

LOAM CASTINGS.

Large Kettles from 100 to 1,500 gallons, and
of any form required, made at short notice.
Also *Curbs* for the same, for the use of *Soap-
boilers* and others. *Sugar Pans* and *Oil Kettles*
of all sizes. *Cylinders* for *Paper Manufactu-
rers, Powder Works* or any other purpose, of any
size that may be wanted, from one foot or less
to fifteen feet in diameter. An assortment of
Soap Kettles, &c. usually kept on hand.

Heavy Loam and *Dry Sand* Castings, made
of gun iron, are warranted to be from 50 to
100 per cent stronger than if made of common
foundry iron.

☞ ORDERS for *Locomotive Cranks, Car Axles,* and
all descriptions of *Shafting* of forged iron, executed with
despatch.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
215	1	7	3½	17	5
216	2	3¼	3¼	26	4⅜
482	1	7¾	3¼	19	9
483	21	7½	3¼	256	9 16 segmt.
484	10		3¼	117	9
485	2	1●¾	3¼	35	9
217	2	3¼	3⅛	27	4½
218	1	10¾	3⅛	22	3⅝
223	2		3⅛	24	7½
224		10½	3⅛	11	7¼
219	4	2¼	3	53	5½
220	3	1	3	39	5½
221	2	9¼	3	35	5½
222	2	1⅝	3	27	5½

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No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
193	1	10¾	3	24	6½	
442	2	4	3	29	5½	
1	20		2⅞	220	7	24 segmt.
2	5	11⅝	2⅞	78	7	
3	2	11½	2⅞	39	7	
4	2	4⅜	2⅞	31	7	
5	20		2⅞	220	6	24 segmt.
6	4	1¾	2⅞	54	5	mortice.
0	2		2⅞	26	5	
27	24	4½	2⅞	323	7	{11 of 14 cogs. {13 of 13 do.
486	1	6¾	2⅞	20	7	

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
7	6	$6\frac{3}{4}$	$2\frac{13}{16}$	88	$6\frac{3}{8}$	
8	3	$6\frac{3}{4}$	$2\frac{13}{16}$	40	$6\frac{3}{8}$	
9	2	$\frac{1}{4}$	$2\frac{13}{16}$	27	$6\frac{1}{2}$	
10	1	$6\frac{7}{8}$	$2\frac{13}{16}$	21	$6\frac{3}{8}$	
11	1	$5\frac{3}{16}$	$2\frac{13}{16}$	19	$6\frac{3}{8}$	
12	10	8	$2\frac{13}{16}$	144	6	16 segmt.
13	6	$6\frac{5}{8}$	$2\frac{13}{16}$	88	5	mortice.
453	10		$2\frac{13}{16}$	137	$6\frac{1}{2}$	$\begin{cases} 5 \text{ segmt. 12 cogs.} \\ 7 \quad \text{do.} \quad 11 \text{ do.} \end{cases}$
15	1	8	$2\frac{3}{4}$	23	$4\frac{1}{4}$	
16	9	8	$2\frac{3}{4}$	132	8	12 segmt.
17	4	$7\frac{3}{4}$	$2\frac{3}{4}$	64	8	
18	12		$2\frac{3}{4}$	165	$7\frac{1}{2}$	15 segmt.
19	5		$2\frac{3}{4}$	68	$7\frac{3}{8}$	
20	4	$\frac{1}{2}$	$2\frac{3}{4}$	55	7	
21	1	$11\frac{3}{4}$	$2\frac{3}{4}$	27	$7\frac{3}{8}$	
22	1	$9\frac{1}{4}$	$2\frac{3}{4}$	24	6	
23	3		$2\frac{3}{4}$	41	$7\frac{3}{8}$	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
24	3	$9\frac{1}{2}$	$2\frac{3}{4}$	52	$4\frac{3}{4}$	
25	1	$\frac{1}{2}$	$2\frac{3}{4}$	14	$4\frac{3}{4}$	
73	· 1	10	$2\frac{3}{4}$	25	6	
74	19		$2\frac{3}{4}$	360	8	20 segmt.
75	2		$2\frac{3}{4}$	27	8	
487	1	$\frac{1}{2}$	$2\frac{3}{4}$	14	$8\frac{1}{2}$	
26	2		$2\frac{11}{16}$	28	5	
71	2		$2\frac{11}{16}$	28	7	
60	2	$7\frac{3}{8}$	$2\frac{5}{8}$	38	$3\frac{1}{2}$	
61		$10\frac{7}{8}$	$2\frac{5}{8}$	13	$3\frac{1}{2}$	
62	1	$9\frac{1}{2}$	$2\frac{5}{8}$	26	$3\frac{1}{2}$	
63	1	8	$2\frac{5}{8}$	24	5	

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
64	1	8	$2\frac{5}{8}$	24	5	
65	13	$10\frac{1}{2}$	$2\frac{5}{8}$	201	7	{ 9 segmt. 13 cogs. / 7 do. 12 do.
67	10		$2\frac{5}{8}$	144	7	8 segmt.
76	2	4	$2\frac{5}{8}$	34	7	
437	1	$10\frac{1}{2}$	$2\frac{5}{8}$	27	11	
436	14	2	$2\frac{5}{8}$	208	11	16 segmt.
446	18	$5\frac{1}{2}$	$2\frac{5}{8}$	264	7	24 segmt.
28	13		$2\frac{9}{16}$	192	7	16 segmt.
29	1	$8\frac{5}{8}$	$2\frac{9}{16}$	25	7	
53	5	$8\frac{3}{4}$	$2\frac{9}{16}$	84	5	
54	4	$\frac{1}{2}$	$2\frac{9}{16}$	60	4	
55	2		$2\frac{9}{16}$	30	4	
56	1	$1\frac{1}{2}$	$2\frac{9}{16}$	17	$4\frac{3}{4}$	
57		$8\frac{3}{8}$	$2\frac{9}{16}$	10	4	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
59	2	$5\frac{1}{2}$	$2\frac{9}{16}$	36	4	
78	1	$8\frac{1}{2}$	$2\frac{9}{16}$	25	7	
448	20		$2\frac{9}{16}$	300	7	20 segmt.
30	18	$1\frac{3}{4}$	$2\frac{1}{2}$	272	$5\frac{1}{2}$	16 segmt.
31	2	$\frac{1}{4}$	$2\frac{1}{2}$	30	$5\frac{1}{2}$	
32	4	4	$2\frac{1}{2}$	66	$4\frac{3}{4}$	
33	2	$11\frac{1}{4}$	$2\frac{1}{2}$	44	$4\frac{3}{4}$	
34	18	1	$2\frac{1}{2}$	272	7	16 segmt.
35	2	10	$2\frac{1}{2}$	42	7	
36	1	$\frac{3}{4}$	$2\frac{1}{2}$	16	$5\frac{1}{4}$	
37	16	2	$2\frac{1}{2}$	242	$4\frac{1}{8}$	22 segmt.
38	3	$5\frac{1}{4}$	$2\frac{1}{2}$	53	$5\frac{3}{4}$	
39	1	$7\frac{5}{8}$	$2\frac{1}{2}$	24	$3\frac{7}{8}$	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
40	2	2½	2½	33	5½	⎱ pinions for
41	1	4	2½	20	5½	⎰ mortice
42	1	1¾	2½	17	5	wheels.
43	4	5	2½	66	5	mortice.
44	17	2	2½	256	7¼	16 segmt.
45	2	10¾	2½	43	7¼	
46	15	10½	2½	240	7	16 segmt.
47	2	¼	2½	30	7	
48	11	6	2½	176	5	16 segmt.
49	1	7	2½	24	5	
50	21		2½	312	8½	24 segmt.
51	2	¾	2½	31	8½	
52	4	6½	2½	68	6	
395	3	2	2½	48	6½	
396	1		2½	15	7	
397		11	2½	14	7½	
398	1	2¼	2½	18	8	
399	10		2½	152	5½	8 segmt.
400	7	–	2½	108	6	
58	4	11	2½	76	4¾	⎰4 segmt. 13 cogs. ⎱2 do. 12 do.
66	21	7	2½	320	7	16 segmt.
68	18		2½	272	6	16 segmt.
70	9	2	2½	140	5	⎰8 segmt. 12 cogs. ⎱4 do. 11 do.
69	18		2½	272	7	16 segmt.
72	2		2½	30	7	
77	1	8	2½	25	7	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
79	3	10	$2\frac{1}{2}$	58	6
488	2	$4\frac{1}{2}$	$2\frac{1}{2}$	36	6
489	1	$\frac{1}{4}$	$2\frac{1}{2}$	15	4
490	1	$11\frac{1}{4}$	$2\frac{1}{2}$	29	$5\frac{1}{2}$
	1 – 2¼		*2½*	*18*	*6⁻*
80	3	11	$2\frac{7}{16}$	60	$6\frac{3}{8}$
81	18	$1\frac{1}{2}$	$2\frac{7}{16}$	280	4 ∴ 20 segmt.
447	14	$6\frac{1}{2}$	$2\frac{7}{16}$	224	$5\frac{1}{2}$ 16 segmt.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
87	17		$7\frac{7}{16}$	264	$5\frac{1}{2}$	24 segmt.
424	1	8	$2\frac{7}{16}$	26	6	
	1- 3 7/16		*2 7/16*	*30*	*5½*	
90	15		$2\frac{3}{8}$	240	6	16 segmt.
91	2	$11\frac{1}{4}$	$2\frac{3}{8}$	47	6	
92	1		$2\frac{3}{8}$	16	6	
93	2	$11\frac{3}{4}$	$2\frac{3}{8}$	46	$5\frac{1}{8}$	
94	14		$2\frac{3}{8}$	224	5	16 segmt.
95	11	6	$2\frac{3}{8}$	192	4	12 segmt.
96	2	$1\frac{3}{8}$	$2\frac{3}{8}$	33	$5\frac{7}{8}$	
97			$2\frac{3}{8}$		6	
98	1	$11\frac{1}{4}$	$2\frac{3}{8}$	30	5	
99	4	$1\frac{1}{2}$	$2\frac{3}{8}$	66	6	
100	1	$4\frac{1}{2}$	$2\frac{3}{8}$	22	6	
101	12	$1\frac{1}{2}$	$2\frac{3}{8}$	192	$5\frac{1}{4}$	
102	1	$6\frac{3}{8}$	$2\frac{3}{8}$	24	$5\frac{1}{2}$	
103	2		$2\frac{3}{8}$	32	$5\frac{1}{2}$	
104	15	$10\frac{1}{2}$	$2\frac{3}{8}$	156	4	16 segmt.
105	1	$4\frac{1}{2}$	$2\frac{3}{8}$	22	4	
106	8	$1\frac{1}{2}$	$2\frac{3}{8}$	130	$5\frac{1}{2}$	10 segmt.
420	1	$7\frac{1}{2}$	$2\frac{3}{8}$	26	6	
421	24	$1\frac{1}{2}$	$2\frac{3}{8}$	384	7	24 segmt.
422	1	$4\frac{3}{4}$	$2\frac{3}{8}$	22	7	

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No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
418	5	7¼	2⅜	86	5	{ 6 segmt. 11 cogs. 2 do. 10 do.
419	23	10	2⅜	382	5½	{ 30 segmt. 12 cogs. 2 do. 11 do.
89	17		2⅜	272	6½	16 segmt.
88	9	9	2⅜	156	5½	12 segmt.
86	20		2⅜	321	5½	{ 9 segmt. 14 cogs. 15 do. 13 do.
85	13	2	2⅜	216	6	{ 16 segmt. 11 cogs. 4 do. 10 do.
84	5	4½	2⅜	86	6	{ 7 segmt. 11 cogs. 1 do. 9 do.
83	2	¼	2⅜	32	6½	
430	15		2⅜	262	5	{ 6 segmt. 17 cogs. 10 do. 16 do.
429	9	7½	2⅜	156	6	12 segmt.
428	1	7½	2⅜	26	6	
82	1	4¾	2⅜	22	7	
449	24		2⅜	384	7	24 segmt.
501	12	3	2⅜	196	6½	{ 4 segmt. 17 cogs. 8 do. 16 do.
	2 - 4⅛		2⅜	37	6½	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
107	11	7	$2\frac{5}{16}$	192	$6\frac{1}{2}$	16 segmt.
108	1	$6\frac{1}{4}$	$2\frac{5}{16}$	25	$6\frac{1}{2}$	
110	16	$1\frac{1}{2}$	$2\frac{5}{16}$	264	5	24 segmt.
111	1	6	$2\frac{5}{16}$	24	5	
112	1		$2\frac{5}{16}$	16	5	
113		$8\frac{7}{8}$	$2\frac{5}{16}$	12	5	
114	11	$10\frac{5}{8}$	$2\frac{5}{16}$	194	5	$\left\{ \begin{matrix} 10 \text{ segmt. } 16 \text{ cogs.} \\ 2 \text{ do. } 17 \text{ do.} \end{matrix} \right.$

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
124	1	10¾	2¼	32	5½	
125	15	10¾	2¼	270	5½	18 segmt.
126	2	4½	2¼	39	5	
128	13	9	2¼	228	4½	19 segmt.
129	1	8½	2¼	28	5	
130	8	6	2¼	144	4⅞	12 segmt.
131	3	1	2¼	53	4	
132	1	11½	2¼	33	4	
133	1	⅜	2¼	17	12 } pinions for	
134		11½	2¼	16	12 } rolling mills.	
135	28		2¼	432	7	24 segmt.
136	17		2¼	288	7	16 segmt.
137	20		2¼	336	7	24 segmt.
138	7	10½	2¼	132	5½	11 segmt.
139	3	4¼	2¼	57	7	
140	2	9	2¼	47	7	

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
141	· 2	11¾	2¼	50	5½
143	2	5¼	2¼	41	7
144	1	9½	2¼	31	7
145	2	1½	2¼	36	7
146		9¼	2¼	13	7
147	1	3¾	2¼	22	5½
149	15		2¼	256	5 16 segmt.
123	12		2¼	201	5½ { 12 segmt. 14 cogs. / 3 do. 11 do.
122	16		2¼	256	5½ 16 segmt.
121	10		2¼	168	5½ 8 segmt.
120	2	4	2¼	38	5
438	1	7½	2¼	27	5
450	19		2¼	320	7 16 segmt.
451	18	2	2¼	304	5½ 16 segmt.
490	1	11¼	2¼	29	5½
491	2	1⅞	2¼	36	7
492	32	1	2¼	539	7 { 35 segmt. 15 cogs. / 1 do. 14 do.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
142	1	3¼	2⁸⁄₁₆	39	4½ mortice.
481	9	4	2³⁄₁₆	160	5½ { 4 segmt. 14 cogs. / 8 do. 13 do.
493	3	8¼	2³⁄₁₆	65	4½ mortice.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
150	6	10⅝	2⅛	120	4	
151	5	4½	2⅛	94	4	
152	3	8½	2⅛	65	4	
153	2	7½	2⅛	46	4	
154	2	⅝	2⅛	36	4	
155	2		2⅛	35	4	
156	1	1⅛	2⅛	19	4	
157		11	2⅛	16	3⅝	
158		9	2⅛	13	5	
159	12	10½	2⅛	224	3½	16 segmt.
160	20		2⅛	352	4	32 segmt.
161	13	8	2⅛	240	4	16 segmt.
162	11	10	2⅛	213	4	16 segmt.
163	10		2⅛	180	4	12 segmt.
164	14		2⅛	252	4	{ 12 segmt. 16 cogs. / 4 do. 15 do.
166	11	2	2⅛	192	5¼	16 segmt.
423	2	9	2⅛	48	5	
167	10		2⅛	180	5	12 segmt.
168	11		2⅛	198	5	18 segmt.
169	2	1	2⅛	37	5	
170	1	5¾	2⅛	26	5	
171	7	10½	2⅛	140	4	10 segmt.
172		11	2⅛	16	4¼	
173	4	8	2⅛	83	4	{ 3 segmt. 11 cogs. / 5 do. 10 do.
174	6		2⅛	105	4	7 segmt. 15 cogs.

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
182	10	$10\frac{3}{4}$	$2\frac{1}{8}$	195	5	{ 3 segmt. 13 cogs. / 13 do. 12 do.
183	8	$1\frac{1}{2}$	$2\frac{1}{8}$	144	5	8 segmt.
184	5	4	$2\frac{1}{8}$	94	4	{ 6 segmt. 12 cogs. / 2 do. 11 do.
185	15		$2\frac{1}{8}$	265	4	{ 15 segmt. 17 cogs. / 1 do. 16 do.
186	5	$11\frac{1}{2}$	$2\frac{1}{8}$	106	4	{ 2 segmt. 14 cogs. / 6 do. 13 do.
187	2	5	$2\frac{1}{8}$	43	5	
115	2	$3\frac{1}{2}$	$2\frac{1}{8}$	41	5	
109	2	9	$2\frac{1}{8}$	48	5	
535	1	$6\frac{3}{8}$	$2\frac{1}{8}$	27	4	
431	15	$10\frac{1}{2}$	$2\frac{1}{8}$	283	4	{ 11 segmt. 18 cogs. / 5 do. 17 do.
494	3		$2\frac{1}{8}$	54	4	mortice.
	12 – 4		*2/8*	*216*	*5 { 8 4 14 / 8 4 13*	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
175	N	10½	2	228	4⅛	12 segmt.
176	10	1	2	192	4	12 segmt.
177	7		2	132	4	12 segmt.
178	1	6⅜	2	29	4⅛	
180		11	2	17	7	
181	14	1½	2	256	5	16 segmt.
116	3	1¼	2	59	5½	
444	2	2½	2	42	5½	
443	5		2	96	4½	mortice.
445	11		2	208	6	16 segmt.
495	2	¼	2	38	5	

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No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
188	7	2	$1\frac{7}{8}$	144	$2\frac{3}{4}$	8 segmt.
189		$9\frac{5}{8}$	$1\frac{7}{8}$	16	3	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
195	14		$1\frac{3}{4}$	304	4	16 segmt.
196	11	6	$1\frac{3}{4}$	252	$3\frac{3}{4}$	18 segmt.
197	11	4	$1\frac{3}{4}$	252	5	12 segmt.
198	9	10	$1\frac{3}{4}$	216	4	18 segmt.
199	5		$1\frac{3}{4}$	108	4	6 segmt.
200	4	$11\frac{5}{8}$	$1\frac{3}{4}$	108	$4\frac{3}{4}$	
201	3	$4\frac{1}{4}$	$1\frac{3}{4}$	73	$4\frac{3}{4}$ wt. 370 lb.	
202	1	$6\frac{7}{8}$	$1\frac{3}{4}$	34	4	
203	1	$5\frac{5}{8}$	$1\frac{3}{4}$	32	$5\frac{1}{4}$ wt. 156 lb.	
204	1	$1\frac{7}{8}$	$1\frac{3}{4}$	25	$4\frac{1}{8}$	
205		10	$1\frac{3}{4}$	18	$4\frac{3}{4}$	
206	1	$7\frac{7}{8}$	$1\frac{3}{4}$	36	$3\frac{1}{8}$	
207	7	6	$1\frac{3}{4}$	160	$3\frac{5}{8}$	10 segmt.
208	8	6	$1\frac{3}{4}$	204	$3\frac{1}{2}$	11 segmt.

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
209	8		1¾	176	4	16 segmt.
210	1	1½	1¾	24	3⅝	
211	1	1½	1¾	25	4	
212	10	10	1¾	234	5	18 segmt.
213	6	1	1¾	132	7	
214	1	2	1¾	25	7	
194	1	¼	1¾	22	7	
192		7½	1¾	14	7	
191	1	5	1¾	31	4½	
190		9½	1¾	17	4	
119		7¾	1¾	14	4	
118		6	1¾	11	4	
434	4		1¾	86	4	
433	1	¼	1¾	22	4	
432	3	¼	1¾	65	4	
427	2	¼	1¾	43	4	
426	2	5¼	1¾	53	4¾	
441	9	5	1¾	204	3½	12 segmt.
496	1	8⅜	1¾	36	3¼	
504		11⅞	1¾	21	4	
505		11½	1¾	21	4	
12 - 1			*1¾*	*264*	*4 {9 of 16 / 8 of 17*}	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
225.	7	6	$1\frac{5}{8}$	174	5
226	1		$1\frac{5}{8}$	23	5
227	1	1	$1\frac{5}{8}$	25	5

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
440	2		$1\frac{9}{16}$	48	3
439	6	11	$1\frac{9}{16}$	128	3 12 segmt.

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs	
	Ft.	In.	Inches.		Inches.	
232	12	1½	1½	288	3	18 segmt.
233	11		1½	272	3½	16 segmt.
234	5	10	1½	144	3	12 segmt.
235	10	2½	1½	256	3	16 segmt.
236	3	7	1½	89	3	
237	2	6	1½	62	3	
238	2	2⅛	1½	54	3	
239	1	6	1½	37	3	
240		8½	1½	18	3⅛	
241		8¼	1½	17	3	
242		7⅜	1½	15	3	
243	7		1½	180	2¾	12 segmt.
244		6⅛	1½	13	2⅜	
245		5⅞	1½	12	3½	
246	1	3	1½	31	3	
247	6		1½	144	4½	
248	5		1½	128	4½	
249	8	4½	1½	216	4	12 segmt.
250	10		1½	152	3¼	12 segmt.
251	7	4	1½	192	3⅜	12 segmt.
252	5	10	1½	140	3¼	{7 segmt. 18 cogs. / 1 do. 14 do.}
253	3		1½	75	4½	
254	1	8	1½	42	4½	
255	1	6	1½	38	4½	
401		9	1½	20	4½	

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
402	1		$1\frac{1}{2}$	25	$4\frac{1}{2}$	
403		$7\frac{1}{8}$	$1\frac{1}{2}$	15	$4\frac{1}{2}$	
404	2		$1\frac{1}{2}$	50	$3\frac{1}{4}$	
405	4	$4\frac{1}{2}$	$1\frac{1}{2}$	110	$3\frac{1}{4}$	
406	3		$1\frac{1}{2}$	75	$3\frac{1}{4}$	
407	1	$2\frac{3}{8}$	$1\frac{1}{2}$	30	$3\frac{1}{4}$	
408	1		$1\frac{1}{2}$	25	$3\frac{1}{4}$	
409		$8\frac{5}{8}$	$1\frac{1}{2}$	18	$3\frac{1}{4}$	
410		$5\frac{7}{8}$	$1\frac{1}{2}$	12	$3\frac{1}{4}$	
257	25	9	$1\frac{1}{2}$	646	$3\frac{1}{4}$	38 segmt.
258	16	$\frac{1}{2}$	$1\frac{1}{2}$	408	3	24 segmt.
259	1	11	$1\frac{1}{2}$	48	$3\frac{1}{4}$	
284	4	$6\frac{3}{4}$	$1\frac{1}{2}$	115	$3\frac{1}{4}$	
117	5	$2\frac{3}{4}$	$1\frac{1}{2}$	130	3	
425	10	1	$1\frac{1}{2}$	240	3	16 segmt.
424	9	5	$1\frac{1}{2}$	228	3	12 segmt.
497		$10\frac{1}{8}$	$1\frac{1}{2}$	21	$3\frac{1}{4}$	
505	1	8	$1\frac{1}{2}$	42	3	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
256	4	1¼	1¾	96	3¼ mortice.

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No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
286	2	4⅝	1¼	71	2¾
287	1	7	1¼	48	2¾
288	1	2⅜	1¼	36	2¾
289	1	1½	1¼	34	2¾
290	1	⅝	1¼	32	2¾
291	1		1¼	30	2¾
292		10¾	1¼	28	2¾
293		10⅜	1¼	26	2¾
294		9⅜	1¼	24	2¾
295		8¾	1¼	22	2¾
296		7⅕	1¼	18	2¾
297		6¼	1¼	16	2⅝
298		4¾	1¼	12	2¾
299		4½	1¼	11	2⅞
300	1	2½	1¼	38	1⅝
301		7½	1¼	19	1⅝
302	2	6	1¼	75	3¾
285	1	5½	1¼	44	3¾

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
282	2	$\frac{1}{2}$	$1\frac{3}{16}$	65	$2\frac{1}{4}$
283		$4\frac{1}{8}$	$1\frac{3}{16}$	11	$2\frac{1}{2}$
498	1	10	$1\frac{3}{16}$	58	3
499	1	$3\frac{5}{8}$	$1\frac{3}{16}$	42	3
262	3	$7\frac{3}{4}$	$1\frac{1}{8}$	116	3
263	3	$\frac{1}{4}$	$1\frac{1}{8}$	96	3
264	2	$\frac{1}{2}$	$1\frac{1}{8}$	65	3

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
265	1	8	$1\frac{1}{8}$	53	3	
266	1	6	$1\frac{1}{8}$	48	3	
267	1	2	$1\frac{1}{8}$	37	3	
268		$10\frac{1}{4}$	$1\frac{1}{8}$	27	3	
269		9	$1\frac{1}{8}$	24	3	
270		$6\frac{1}{8}$	$1\frac{1}{8}$	16	3	
271		$4\frac{1}{8}$	$1\frac{1}{8}$	10	$2\frac{3}{4}$	
272	19	6	$1\frac{1}{8}$	630	3	30 segmt.
273	1	4	$1\frac{1}{8}$	43	3	
274	1		$1\frac{1}{8}$	32	$2\frac{1}{4}$	
275		$7\frac{7}{8}$	$1\frac{1}{8}$	21	$2\frac{1}{4}$	
276		$4\frac{1}{4}$	$1\frac{1}{8}$	11	3	
277	2	$3\frac{3}{4}$	$1\frac{1}{8}$	78	$2\frac{5}{8}$	
278		$5\frac{5}{8}$	$1\frac{1}{8}$	16	$2\frac{5}{8}$	
279		$9\frac{1}{4}$	$1\frac{1}{8}$	27	$2\frac{3}{4}$	
280		8	$1\frac{1}{8}$	21	3	
281		7	$1\frac{1}{8}$	18	3	
228	3	4	$1\frac{1}{8}$	106	3	
229	2	6	$1\frac{1}{8}$	80	3	
230		$11\frac{3}{4}$	$1\frac{1}{8}$	31	3	
231		8	$1\frac{1}{8}$	22	$2\frac{1}{2}$	
260	1	$2\frac{1}{2}$	$1\frac{1}{8}$	39	$2\frac{1}{4}$	
261	1	$9\frac{1}{2}$	$1\frac{1}{8}$	60	$2\frac{1}{2}$	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
304	1	6	$1\frac{1}{16}$	54	2
305	1		$1\frac{1}{16}$	36	2
306	2		$1\frac{1}{16}$	72	2
307	1	2	$1\frac{1}{16}$	41	2
308		6	$1\frac{1}{16}$	18	2

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
309		8	$1\frac{1}{16}$	24	2	
409½		5	$1\frac{1}{16}$	15	2	
410½		$4\frac{7}{8}$	$1\frac{1}{16}$	14	$2\frac{7}{8}$	
303	1	$8\frac{3}{4}$	$1\frac{1}{16}$	59	$2\frac{1}{2}$	
336	1	8	$1\frac{1}{16}$	58	2	
310	4	6	1	168	$4\frac{1}{2}$	6 segmt.
311	4	5	1	162	$3\frac{1}{2}$	6 segmt.
312	4		1	150	$2\frac{1}{4}$	6 segmt.
313		8	1	25	$4\frac{1}{2}$	
314		$8\frac{1}{4}$	1	25	$3\frac{1}{2}$	

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
315		4	1	12	3¾
316	2	4⅜	1	90	3
317		9¾	1	31	3
318		9⅜	1	30	3
319		6⅞	1	22	3
320		4¾	1	15	3
321		3⅝	1	11	3
322	1	4	1	50	2¼
323		8	1	25	2¼
324		6¼	1	19	2¼
325		4¼	1	13	2¼
326	1	4⅛	1	52	1¼
327		7	1	23	1¼
328	2	7⅝	1	101	2¼
329	2	¾	1	79	2¼
330		7¾	1	25	2¼
331		6⅛	1	20	2⅜
332		5	1	16	2¼
411		4⅛	1	13	2¼
412		3 3/16	1	10	2¼
335	2	9¾	1	103	2

SPUR WHEELS.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
390	2		$\frac{7}{8}$	87	2
382		10	$\frac{7}{8}$	35	2
381		$4\frac{1}{2}$	$\frac{7}{8}$	16	2
353		4	$\frac{7}{8}$	15	2
500	1		$\frac{7}{8}$	36	2

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
333	1	$2\frac{3}{8}$	$1\frac{3}{16}$	56	$1\frac{3}{16}$
334		$4\frac{3}{8}$	$1\frac{3}{16}$	17	$1\frac{3}{16}$
340	2	$\frac{1}{4}$	$\frac{3}{4}$	100	3
341	1	$\frac{1}{8}$	$\frac{3}{4}$	50	3
342		$7\frac{1}{8}$	$\frac{3}{4}$	33	3
343		$6\frac{5}{8}$	$\frac{3}{4}$	27	3
344		$3\frac{7}{8}$	$\frac{3}{4}$	16	3
345	3	$5\frac{3}{8}$	$\frac{3}{4}$	169	2
346		$10\frac{1}{8}$	$\frac{3}{4}$	41	2

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No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
347		7 1/8	3/4	29	2
348		6 3/8	3/4	26	2
349		3 1/2	3/4	14	2
350	2	5 3/8	3/4	120	1 1/2
351	1	9 1/4	3/4	87	1 1/2
352	1	2 5/8	3/4	60	1 1/2
354	1	3/8	3/4	50	1 1/2
355		10 1/2	3/4	43	1 1/2
356		9 3/4	3/4	40	1 1/2
357		8 3/4	3/4	36	1 1/2
358		7 7/8	3/4	32	1 1/2
359		5 7/8	3/4	25	1 1/2
360		5 3/8	3/4	22	1 1/2
361		4 5/8	3/4	19	1 1/2
362		3 5/8	3/4	15	1 1/2
363		3	3/4	12	1 1/2
364		2 1/4	3/4	9	1 1/2
365	2	1/4	3/4	98	1 1/2
366		11 7/8	3/4	48	7/8
367		3 1/2	3/4	14	7/8
368		11	3/4	48	1 1/2
369		2 7/8	3/4	12	1 1/4
370		8 3/4	3/4	36	1 1/4
371		5	3/4	20	1 3/8
372		3 1/2	3/4	14	1 3/8
413		2 7/8	3/4	12	1 1/2

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
339	1	6	$\frac{3}{4}$	74	$1\frac{1}{2}$
502	2	2	$\frac{3}{4}$	109	3
503		$4\frac{5}{8}$	$\frac{3}{4}$	19	3
373	1	$2\frac{1}{2}$	$\frac{11}{16}$	64	1
374		3	$\frac{11}{16}$	13	1
375	1	$5\frac{1}{2}$	$\frac{5}{8}$	88	2
376	1	3	$\frac{5}{8}$	75	2
377		5	$\frac{5}{8}$	25	2

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
378		$2\frac{3}{8}$	$\frac{5}{8}$	12	2
379	1	$\frac{1}{2}$	$\frac{5}{8}$	60	$\frac{7}{8}$
380		$3\frac{1}{8}$	$\frac{5}{8}$	15	$\frac{7}{8}$
383	1	$2\frac{5}{8}$	$\frac{9}{16}$	80	$1\frac{1}{4}$
384		$2\frac{1}{16}$	$\frac{9}{16}$	11	$1\frac{1}{4}$
385	1	$4\frac{3}{4}$	$\frac{9}{16}$	96	$1\frac{1}{4}$
386		$4\frac{1}{8}$	$\frac{9}{16}$	24	$1\frac{1}{2}$
414		4	$\frac{9}{16}$	24	$1\frac{1}{2}$
415		$3\frac{1}{8}$	$\frac{9}{16}$	23	$1\frac{1}{8}$
416		$2\frac{1}{4}$	$\frac{9}{16}$	13	$1\frac{3}{4}$
417		$2\frac{1}{8}$	$\frac{9}{16}$	12	$1\frac{1}{2}$

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
387		$9\frac{7}{8}$	$\frac{1}{2}$	64	$1\frac{3}{8}$
388		$6\frac{3}{4}$	$\frac{1}{2}$	44	$1\frac{3}{8}$
389		3	$\frac{1}{2}$	19	$1\frac{5}{16}$
391		$11\frac{7}{8}$	$\frac{3}{8}$	96	$1\frac{1}{8}$
392		6	$\frac{3}{8}$	48	1
393		$4\frac{1}{4}$	$\frac{3}{8}$	34	$1\frac{1}{4}$
394	1	$3\frac{1}{2}$	$\frac{3}{8}$	126	$1\frac{1}{8}$
14		$9\frac{3}{4}$	$\frac{5}{16}$	90	$1\frac{1}{16}$

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
1	1	5¼	3	18	4½ { To run with wooden wheel of 54 cogs.
174	2		3	25	6⅜
173	9	7	3	120	6⅜ 12 segmt.
189	7	8	3	96	5⅝ }
190	2		3	25	5⅝ }
203	5	1¼	2⅞	66	6 }
204	2	¼	2⅞	26	6 }
23	2	8	2¾	36	6 }
24	3		2¾	41	6 }
2	3		2¾	41	6 mortice.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
183	2	10	$2\frac{11}{16}$	40	6
182	6	$8\frac{1}{2}$	$2\frac{11}{16}$	96	6 12 segmt.
176	3	1	$2\frac{5}{8}$	44	8 $\big\}$
175	5	$\frac{5}{8}$	$2\frac{5}{8}$	73	8

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
3	3	1¼	2⅝	45	6¼	
4	13	2	2⅝	192	6¼	} 16 segmt.
145	12		2⅝	176	7⅝	} 16 segmt.
146	3	⅜	2⅝	45	7⅝	
147	8	10	2⅝	128	7	} 16 segmt.
148	2	11	2⅝	42	7	
201	3	8½	2⅝	53	7	
202	2	5¼	2⅝	35	7	

8—10   2⅝ 128   7 — 8. segts

No.	Diameter.		Pitch.	No. Cogs	Length of Cogs.
	Ft.	In.	Inches.		Inches.
25	2		$2\frac{9}{16}$	29	7
26	5	2	$2\frac{9}{16}$	75	7
32	2	7	$2\frac{9}{16}$	37	7
33	5	2	$2\frac{9}{16}$	75	7
185	3	$6\frac{1}{2}$	$2\frac{9}{16}$	52	$7\frac{1}{2}$
184	11	$4\frac{1}{2}$	$2\frac{9}{16}$	170	$7\frac{1}{2}$ } 16 segmt.
5	1	8	$2\frac{1}{2}$	25	$6\frac{1}{2}$
6	9	11	$2\frac{1}{2}$	150	$6\frac{1}{2}$ { 6 segmt. 13 cogs. 6 do. 12 do.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
7	4	4½	2½	66	5½	⎫
8	1	4	2½	20	5½	⎬
9	1	4½	2½	20	6½	
150	4	6	2½	68	5	⎬ mortice.
151	2	3	2½	34	5	
152	2	6	2½	38	5	
153	. 1	6½	2½	23	5	
101	3	7	2½	53	6	
102	2	4	2½	35	6	
50	2	4½	2½	36	6	
51	12	8	2½	192	6	⎬ 16 segmt.

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
11	3	9½	2⅜	60	6	
12	2	¼	2⅜	32	6	
13	3	6⅝	2⅜	56	7	
14	9	2	2⅜	154	7	16 segmt.
15	3	5½	2⅜	53	5½	
16	11	3	2⅜	176	5½	16 segmt.
17	3	3½	2⅜	51	7¼	
18	10	3	2⅜	160	7¼	16 segmt.
19	2	4¾	2⅜	37	5½	
20	10		2⅜	156	5½	12 segmt.
21	3	½	2⅜	48	3	
22		10	2⅜	13	3	mortice.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
30	2	11½	$2\frac{5}{16}$	32	6 ⎫
31	8		$2\frac{5}{16}$	132	6 ⎬ 12 segmt.
36	3	1¼	2¼	52	5 ⎫
37	2	1	2¼	35	5 ⎪
38	15	7	2¼	156	5 ⎬ 16 segmt.
39	2	4	2¼	38	5 ⎭

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
35	4	3½	2¼	72	7 } mortice.
34	1	9½	2¼	30	7 }
	1-6		*2¼*	*42*	*4¾*
40	2	⅛	2⅛	36	4 }
41	10		2⅛	180	4 } 12 segmt.
	1—1/4		*2⅛*	*18*	*4*

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
46	1	6⅛	2 1/16	27	4	
47	9		2 1/16	168	4	} 12 segmt.
48	4		2 1/16	72	4½	
49	2	¾	2 1/16	37	37	4½
178	1	3¾	2	24	4½	
177	3	10½	2	72	4½	} 6 segmt.
54	4	⅜	2	76	5	
55	2	¼	2	38	5	
56	3	4¾	2	64	5	
57	2	6	2	47	5	
58	4	10	2	91	6	} mortice.
59	1	7½	2	30	6	
60	8	3	2	156	5	} 12 segmt.
61	1	7¼	2	30	5	
53	3	¼	2	56	5	
52	1	1	2	20	5	

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
70	1	8	2	32	6	mortice.
71	2	6	2	48	6	
42	1	7¾	2	31	5½	mortice.
43	4	2	2	76	5½	
191	3	3⅜	2	57	6	
192	2	8	2	50	6	mortice.
197	4	8⅞	2	88	7	
198	2	5⅛	2	45	7	

−⅜

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
54½	3	3¾	1 15/16	64	3⅞ ⎞
55½		10	1 15/16	16	3⅞ ⎠
62	1	7¼	1⅞	32	5½ ⎞
63	10	9	1⅞		5½ ⎟ 18 segmt.
64	5	6	1⅞	110	4 ⎟
65		8	1⅞	13	5 ⎟
44	2	2¼	1⅞	43	6 ⎟
45	8	7	1⅞	171	6 ⎠

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No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
180	1	$4\frac{1}{2}$	$1\frac{13}{16}$	28	5 }
179	4	$\frac{1}{2}$	$1\frac{13}{16}$	84	5 }
199	4	$9\frac{3}{4}$	$1\frac{3}{4}$	102	5 } mortice.
200	1	$4\frac{3}{8}$	$1\frac{3}{4}$	29	5 }
193	5		$1\frac{3}{4}$	110	$3\frac{3}{4}$ } 640 lbs.
194	1		$1\frac{3}{4}$	22	$3\frac{3}{4}$ }
68	3	$5\frac{3}{4}$	$1\frac{3}{4}$	75	$4\frac{3}{4}$ }
69	1	$6\frac{3}{4}$	$1\frac{3}{4}$	33	$4\frac{3}{4}$ }

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
72	2		$1\frac{11}{16}$	44	3 ⎫
73	1	$5\frac{3}{4}$	$1\frac{11}{16}$	33	3 ⎬
76	3		$1\frac{5}{8}$	68	4 ⎫
77	1	$5\frac{1}{2}$	$1\frac{5}{8}$	33	4 ⎬

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
78	1	7½	1⅝	37	4	
79	2	10¼	1⅝	66	3¾	⎫
80	2	4⅝	1⅝	55	3¾	⎬
81	6	3½	1⅝	144	3	⎬ 8 segmt.
82		19¾	1⅝	37	3	⎭
195	2	8	1⅝	62	5	
196	1	1	1⅝	25	5	
197	1	10	1⅝	42	3	⎫
198		11	1⅝	21	3	⎭
87	5		1 6/16	125	3¼	⎫ 500 lbs.
88	1		1 9/16	21	3¼	⎭
85	5		1 9/16	120	3½	⎫ 6 segmt.
86		10	1 9/16	20	3½	⎬
188	2	6	1 9/16	60	3½	⎬
187	1	8	1 9/16	40	3½	⎭

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
91		9½	1½	20	2¾	`
92	6		1½	150	2¾	6 segmt.
93	3	8⅛	1½	92	3½	
94	1	8⅝	1½	43	3½	
95	8	7½	1½	216	3¾	12 segmt.
96	1	3	1½	31	3¾	
97	5		1½	128	3¾	8 segmt.
98		10⅛	1½	21	3¾	
154	2	1	1½	54	3⅜	
155	1	½	1½	27	3⅜	
160	2	6	1½	64	3	mortice.
161	1	2½	1½	31	3	

10 —   1½ 252 3¾ ⊣ 12 segts
1 —   1½ 25   3¾

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
99	2	6	$1\frac{7}{16}$	64	4	} mortice.
100	1	3	$1\frac{7}{16}$	32	4	}
105	3		$1\frac{3}{8}$	81	3	}
106	1		$1\frac{3}{8}$	27	3	}
107	1	6	$1\frac{3}{8}$	41	$2\frac{3}{4}$	}
108		11	$1\frac{3}{8}$	25	$2\frac{3}{4}$	}
109	1	$3\frac{1}{4}$	$1\frac{3}{8}$	35	$2\frac{7}{8}$	}
110	1	$\frac{1}{8}$	$1\frac{3}{8}$	28	$2\frac{7}{8}$	}
111	4		$1\frac{3}{8}$	112	$3\frac{3}{4}$	}
112	1		$1\frac{3}{8}$	28	$3\frac{3}{4}$	}
113	2	8	$1\frac{3}{8}$	72	$3\frac{1}{4}$	}
114		8	$1\frac{3}{8}$	18	$3\frac{1}{4}$	}

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
115	1	6	$1\frac{3}{8}$	40	3 ⎱
116	1	$3\frac{3}{4}$	$1\frac{3}{8}$	35	3 ⎰
156	2	6	$1\frac{5}{16}$	72	$3\frac{1}{4}$ ⎱
157	1	3	$1\frac{5}{16}$	36	$3\frac{1}{4}$ ⎰
117	2	$\frac{1}{4}$	$1\frac{1}{4}$	60	$2\frac{3}{4}$ ⎱
118		$9\frac{5}{8}$	$1\frac{1}{4}$	24	$2\frac{3}{4}$ ⎰

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
119	17	9	1¼	528	3	} 24 segmt.
120	1	2	1¼	34	3	
121	5	6	1¼	166	4⅞	
122		6	1¼	15	4⅞	
123½	10	1	1¼	304	3	} 16 segmt.
124½	1		1¼	30	3	
125½	8	6	1¼	126	3	} 16 segmt.
126½	1	3	1¼	38	3	
158	1	1	1¼	32	2⅛	
159		6½	1¼	16	2⅛	
162	2	1¼	1¼	60	3½	
163		5½	1¼	13	3½	

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
165	12		$1\frac{3}{16}$	404	$2\frac{3}{4}$ ⎱ 16 segmt.
166	1	2	$1\frac{3}{16}$	37	$2\frac{3}{4}$ ⎰
123	2	$7\frac{1}{2}$	$1\frac{1}{8}$	86	$2\frac{3}{8}$
124	1	7	$1\frac{1}{8}$	51	$2\frac{3}{8}$
125	2		$1\frac{1}{8}$	66	$3\frac{1}{4}$
126	1		$1\frac{1}{8}$	33	$3\frac{1}{4}$
167	2	$8\frac{1}{4}$	$1\frac{1}{8}$	88	3
168		$5\frac{7}{8}$	$1\frac{1}{8}$	16	3

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No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
169	2	4½	1⅛	88	3 ⎫
170		7	1⅛	22	3 ⎭
	1 – 2¾		1⅛	41	2¼
	– 4¼		1⅛	12	2¼
127	2	4½	1 1/16	81	3⅛ ⎫
128		9½	1 1/16	27	3⅛ ⎬
27	1	6½	1 1/16	54	2¾ ⎬
28		9¼	1 1/16	27	2¾ ⎭
129	2	2¼	1	85	2½ ⎫
130		6½	1	21	2½ ⎭

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
137	1	$5\frac{3}{4}$	$\frac{15}{16}$	60	$1\frac{1}{4}$ }
138		$11\frac{5}{8}$	$\frac{15}{16}$	40	$1\frac{1}{4}$ }
141	1	$3\frac{1}{4}$	$\frac{7}{8}$	54	$2\frac{1}{2}$ }
142		$7\frac{5}{8}$	$\frac{7}{8}$	27	$2\frac{1}{2}$ }

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
143	1	$2\frac{3}{4}$	$\frac{3}{4}$	60	$1\frac{1}{8}$ ⎫
144		$4\frac{7}{8}$	$\frac{3}{4}$	20	$1\frac{1}{8}$ ⎬
172		$6\frac{7}{8}$	$\frac{3}{4}$	28	$2\frac{1}{4}$ ⎫
171	1	$8\frac{1}{2}$	$\frac{3}{4}$	84	$2\frac{1}{4}$ ⎬

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
3	3	10	$2\frac{3}{4}$	52	8
19	1	6	$2\frac{5}{8}$	35	7
40	3	1	$2\frac{5}{8}$	44	8
1	1	8	$2\frac{1}{2}$	25	5

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
2	1	6½	2¼	25	5½
28	1	10	2⅛	32	6 mortice.
33	1	10	2⅛	32	6
4	2	11¾	2	53	4¾

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
6	3	$7\frac{3}{4}$	2	69	$4\frac{3}{4}$
7	2	$1\frac{1}{4}$	2	40	4
8	3		2	55	6 mortice.
9	3		2	56	6
5	1	$\frac{1}{2}$	2	19	5
41	2	6	2	47	$5\frac{1}{2}$
42	2	$6\frac{5}{8}$	2	48	$5\frac{1}{2}$ mortice.
10	2	$\frac{5}{8}$	$1\frac{15}{16}$	40	$4\frac{1}{8}$
11	2	$\frac{5}{8}$	$1\frac{15}{16}$	40	$4\frac{1}{8}$ mortice.

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
12	1	3¼	1¾	27	4
13	3	4	1¾	71	4½
14	1	½	1½	26	2⅞
15	2	5½	1½	63	2³⁄₁₆
18	2		1½	49	3½
16	1	¼	1⁷⁄₁₆	27	3⅝
17	1	4¾	1⁷⁄₁₆	37	3

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.	
	Ft.	In.	Inches.		Inches.	
23	1	9	$1\frac{5}{8}$	39	4	
24	1	$8\frac{1}{2}$	$1\frac{5}{8}$	40	4	mortice.
20	1		$1\frac{3}{8}$	28	3	
43	1	4	$1\frac{1}{4}$	40	3	
21	1	8	$1\frac{1}{4}$	50	$3\frac{1}{8}$	
22	1	$\frac{5}{8}$	$1\frac{1}{4}$	31	$1\frac{3}{4}$	

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No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
25	1	3	$1\frac{1}{8}$	42	$2\frac{1}{4}$
26	1	2	$1\frac{1}{8}$	39	$2\frac{1}{4}$
27	1	6	$1\frac{1}{8}$	50	$3\frac{1}{4}$
29	1	7	1	59	$2\frac{7}{8}$
36	1	$5\frac{3}{4}$	$\frac{15}{16}$	58	$2\frac{1}{8}$

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
38		10	$\frac{7}{8}$	34	$2\frac{3}{4}$
39		6	$\frac{7}{8}$	22	$1\frac{1}{4}$
30		9	$\frac{3}{4}$	38	$1\frac{5}{8}$
31		$8\frac{5}{8}$	$\frac{3}{4}$	36	$1\frac{3}{16}$
44		$9\frac{5}{8}$	$\frac{3}{4}$	40	$1\frac{3}{4}$
32	1		$\frac{1}{2}$	78	$1\frac{1}{4}$
34		$5\frac{3}{8}$	$\frac{3}{8}$	45	$\frac{5}{8}$
35		$3\frac{7}{8}$	$\frac{3}{8}$	30	$\frac{5}{8}$

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
1	Rack.	2⅛	14	2½
2	11⅛	2⅛	16	3
30	Rack.	1¾	22	3⅝
210	1 1⅝	1¾	24	3⅝
3	Rack.	1⅛	31	3
4	4⅞	1⅛	13	3

No.	Diameter.	Pitch.	No. Cogs.	Length of Cogs.
	Ft. In.	Inches.		Inches.
5	Rack.	$1\frac{1}{8}$	72	$2\frac{1}{4}$
6	$6\frac{3}{4}$	$1\frac{1}{8}$	18	$2\frac{3}{8}$
7	$3\frac{3}{8}$	$1\frac{1}{8}$	9	$2\frac{3}{8}$
8	Rack.	$1\frac{1}{8}$	18	4
4	$4\frac{7}{8}$	$1\frac{1}{8}$	13	3
33	Rack.	$1\frac{1}{8}$	22	$2\frac{1}{2}$
34	Rack.	$1\frac{1}{8}$	16	3
35	$4\frac{3}{8}$	$1\frac{1}{8}$	12	$2\frac{7}{8}$
36	$4\frac{1}{2}$	$1\frac{1}{8}$	12	$2\frac{3}{4}$
37	$3\frac{3}{4}$	$1\frac{1}{8}$	10	$3\frac{1}{8}$
38	$3\frac{1}{2}$	$1\frac{1}{8}$	10	$2\frac{7}{8}$
9	Rack.	1	20	$1\frac{5}{8}$
10	$3\frac{3}{8}$	1	10	$1\frac{5}{8}$
41	Rack.	1	65	$1\frac{1}{2}$
42	$3\frac{7}{8}$	1	12	$1\frac{1}{2}$
43	3	1	10	$1\frac{5}{8}$
44	$2\frac{7}{8}$	1	9	2

No.	Diameter.		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
15	Rack.		$\frac{3}{4}$	33	$1\frac{1}{2}$
16		$2\frac{3}{8}$	$\frac{3}{4}$	10	$1\frac{3}{8}$
11	Rack.		$\frac{11}{16}$	53	$2\frac{1}{4}$
12	Rack.		$\frac{11}{16}$	53	$1\frac{3}{4}$
13		$4\frac{5}{8}$	$\frac{11}{16}$	21	$1\frac{3}{4}$
14	•	$2\frac{5}{8}$	$\frac{11}{16}$	12	$1\frac{3}{4}$
17	Rack.		$\frac{11}{16}$	53	$1\frac{1}{8}$
18		$2\frac{5}{8}$	$\frac{11}{16}$	12	$1\frac{1}{4}$
21	Rack.		$\frac{5}{8}$	40	$1\frac{1}{8}$
22		$3\frac{1}{8}$	$\frac{5}{8}$	16	1

No.	Diameter		Pitch.	No. Cogs.	Length of Cogs.
	Ft.	In.	Inches.		Inches.
25	Rack.		$\frac{9}{16}$	140	2
26		3	$\frac{9}{16}$	18	$2\frac{1}{4}$
27	Rack.		$\frac{9}{16}$	68	$1\frac{1}{2}$
28		$4\frac{1}{4}$	$\frac{9}{16}$	23	$1\frac{1}{2}$
47	Rack.		$\frac{5}{16}$	157	2
48		$3\frac{7}{8}$	$\frac{5}{16}$	38	2
45	Rack.		$\frac{3}{8}$	138	$1\frac{1}{4}$
46		$1\frac{1}{2}$	$\frac{3}{8}$	12	$1\frac{1}{2}$

No.	Diameter.		Face.		Lbs.	
	Ft.	In.	Ft.	In.		
1	12		2	1	9000	
2	12		1	9	6160	
3	12		2	1	6840	
4	10		1	8	4200	
5	10		1	4	3700	
6	10		1	4	3750	
7	9		1	8	3250	
8	9		1	5	3000	
9	8		1	6	2510	
10	8		1	2	2100	
11	7		1	2	2475	
12	7		1	2	1550	
13	6			11	1045	
14	5		1		840	
15	5		1	8	1730	Wrought arms.
16	4			9	400	
17	4	$1\frac{1}{8}$		$3\frac{5}{8}$		
18	3			8	225	
19	3			6	120	
20	3			9	210	
21	3			6		
22	3		1	2	300	Strong arms.
23	3			$9\frac{1}{2}$		
24	2	6		$9\frac{1}{2}$		
25	2	6		6		
26	2	$4\frac{1}{8}$		5		

No.	Diameter.		Face.		Lbs.	
	Ft.	In.	Ft.	In.		
27	2	4		6		
28	2	2		6		
29	2	$\frac{1}{4}$		$4\frac{1}{2}$		
30	2			$10\frac{1}{2}$		
31	2			6		
32	2			3		
33	2			8		
34	1	10		6		
35	1	9		9		
36	1	$9\frac{1}{2}$		$4\frac{1}{2}$		
37	1	$8\frac{3}{4}$		$2\frac{1}{2}$		
38	1	8		6		Half pulley.
39	1	$7\frac{1}{4}$		6		
40	1	8		6		
41	1	8		$4\frac{1}{2}$		
42	1	$6\frac{1}{8}$	1	$1\frac{1}{4}$		
43	1	6		8		
44	1	$5\frac{1}{4}$		6		
45	1	$4\frac{1}{4}$		6		
46	1	4		7		
47	1	4		2		
48	1	6		6		
49	1	6		$4\frac{1}{2}$		
50	1	6		$3\frac{1}{2}$		
51	1	4		$4\frac{1}{4}$		
52	1	4		$3\frac{1}{2}$		

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No.	Diameter.		Face.		Lbs.	
	Ft.	In.	Ft.	In.		
53	1	4		9		
54	1	3		2$\frac{5}{8}$		
55	1	2$\frac{7}{8}$		2$\frac{3}{8}$		
56	1	2		10		
57	1	2		6		
58	1	2		4$\frac{1}{2}$		
59	1	1$\frac{5}{8}$		3$\frac{3}{8}$		
60	1	1$\frac{1}{8}$		6		
61	1	$\frac{1}{4}$		5		
62	1			4$\frac{3}{4}$		
63	1			2$\frac{3}{8}$		
64	1			1$\frac{5}{8}$		
65	1		1			
66		11$\frac{3}{4}$		2$\frac{3}{8}$		
67		11$\frac{1}{8}$		6		
68		11		8$\frac{1}{8}$		
69		11		3$\frac{3}{8}$		
70		10		4		
71		10		2$\frac{5}{8}$		
72		10		6		
73		10		4$\frac{1}{2}$		
74		9$\frac{3}{8}$		6		
75		9		8$\frac{1}{8}$		
76		9		2$\frac{1}{2}$		
77		8$\frac{1}{4}$		3		
78		7		7		

No.	Diameter.		Face.		Lbs.
	Ft.	In.	Ft.	In.	
79		7		6	
80		8		10	
81		8		6	
82		$6\frac{3}{8}$		$1\frac{5}{8}$	
83		6		$2\frac{1}{2}$	
84		$5\frac{1}{2}$		$2\frac{1}{2}$	
85		6		6	
86		5		6	
87		5		5	
88		6		$4\frac{1}{2}$	

No.	Diameter.		Face.	Depth.	Lbs.	
	Ft.	In.	Inches.	Inches.		
36	5	8			1200	Cast iron arms.
8	4	6	2¼	3⅞		
9	4		2	3		
10	3	10¾	2½	3½		
11	3	6	2¼	2½		
12	3	6	1⅝	2½		
35	3	4			300	Wro't. iron arms.
13	3	3¾	3	2¼		
14	3	½	1¼	1⅞		
15	2	7¾	2	3¾		
16	2	7⅜	2½	1⅜		
17	2	6	2¾	1¼		
18	1	5½	¾	1⅛		
19	1	5⅞	½	1		
20	1	2⅝	1	1½		
21	1		¾	¾		
22	1	¼	1⅜	Round.		
23	8	1	4½	6	2800	Wrought arms.

No.	Diameter.		Lbs.		
	Ft.	In.			
23	10		2000	Wro't. iron arms.	
24	9		2450	Wro't. iron arms.	
25	8		1700		
26	7	2	1000		
27	6	10	800		
4	5				
28	5	9	600		
29	5	1	400		
2	4	11¾			
3	4	11¾	296		
30	4	7	260	Cast iron arms.	
5	4	½	209		
7	4	½			
6	4		277		
31	3		130		
34	2	6	63	Cast iron arms.	
32	2	4	128		
33	2				
	7	6	1400	Wro't. iron arms.	
			68		

No.	Diameter.		Face.	
	Ft.	In.	Inches.	
1	2	8	$2\frac{7}{8}$	6 straight arms.
2	2	$3\frac{3}{4}$	$3\frac{1}{4}$	6 crooked arms.
3	2	2	$2\frac{7}{8}$	4 branched arms.
4	2	2	$2\frac{3}{8}$	4 straight arms.
5	2	$1\frac{3}{4}$	$1\frac{3}{4}$	4 branched arms.
6	1	$11\frac{1}{2}$	$1\frac{1}{8}$	4 straight arms.
7	1	$10\frac{1}{2}$	$2\frac{3}{4}$	4 branched arms.
8	2	$\frac{1}{2}$		cone wheel.

No.	Diam.	Thickness.		No.	Diam.	Thickness.
	Inches.	Inches.			Inches.	Inches.
1	20	2¾	Arms.	27	7½	1¼
2	24	3		28	7½	1
3	15	2	Arms.	29	7	2
4	12	2¼		30	7	1¾
5	12	1¾		31	7	1½
6	11	2½		32	7	1¼
7	11	2¼		33	7	1
8	10½	2⅜		34	6¾	1½
9	10½	1¾		35	6½	1½
10	10	2		36	6½	1¼
11	10	1½		37	6½	1
12	10	1		38	6½	2⅛
13	9	2		39	6½	1⅞
14	9	1¾		40	6¼	1¾
15	9	1½		41	6¼	1½
16	9	1¼		42	6¼	1¼
17	9	1		43	6	2⅕
18	8¾	1¾		44	6	1¾
19	8	3		45	6	1½
20	8	2		46	6	1¼
21	8	1¾		47	6	1
22	8	1¼		48	5¾	·1¼
23	8	1		49		
24				50	5½	1½
25	7½	2¼		51	5½	1¼
26	7½	1¾		52	5½	1

SHIVES.

No.	Diam.	Thickness.		No.	Diam.	Thickness.
	Inches.	Inches.			Inches.	Inches.
53	5	$1\frac{1}{2}$		79	$3\frac{1}{2}$	$\frac{7}{8}$
54	5	$1\frac{1}{4}$		80	$3\frac{1}{2}$	$\frac{3}{4}$
55	5	$1\frac{1}{8}$		81	$3\frac{1}{4}$	1
56	5	1		82	$3\frac{1}{4}$	$\frac{7}{8}$
57	$4\frac{3}{4}$	$1\frac{1}{2}$		83	3	$1\frac{1}{4}$
58	$4\frac{3}{4}$	$1\frac{1}{4}$		84	3	1
59	$4\frac{3}{4}$	$1\frac{1}{8}$		85	3	$\frac{7}{8}$
60	$4\frac{1}{2}$	2		86	$2\frac{3}{4}$	1
61	$4\frac{1}{2}$	$1\frac{3}{4}$		87	$2\frac{3}{4}$	$\frac{7}{8}$
62	$4\frac{1}{2}$	$1\frac{1}{2}$		88	$2\frac{1}{2}$	$\frac{7}{8}$
63	$4\frac{1}{2}$	$1\frac{1}{4}$				
64	$4\frac{1}{2}$	$1\frac{1}{8}$				
65	$4\frac{1}{2}$	1				
66	$4\frac{1}{4}$	$1\frac{1}{2}$				
67	$4\frac{1}{4}$	$1\frac{1}{4}$				
68	$4\frac{1}{4}$	1				
69	4	$1\frac{1}{2}$				
70	4	$1\frac{1}{4}$				
71	4	1				
72	$3\frac{3}{4}$	$1\frac{1}{4}$				
73	$3\frac{3}{4}$	1				
74	$3\frac{3}{4}$	$\frac{7}{8}$				
75	$3\frac{3}{4}$	$\frac{3}{4}$				
76	$3\frac{1}{2}$	$1\frac{1}{2}$				
77	$3\frac{1}{2}$	$1\frac{1}{4}$				
78	$3\frac{1}{2}$	1				